

Appl. No. 10/051,724
Atty. Docket No. 8840
Amdt. dated October 10, 2003
Reply to Office Action of 06/16/2003
Customer No. 27752

REMARKS

Applicants respectfully request reconsideration of the present application.

Claims 1 - 15 are pending in the present application. No additional claims fee is believed to be due.

ART REJECTIONS

Before turning to the Examiner's rejections under 35 U.S.C. §102(b) and §103(a), it may be helpful to briefly review the substance of Applicants' invention. Applicants' claimed invention is directed to environmentally degradable films comprising a specifically recited polyhydroxyalkanoate copolymer (PHA) and a polylactic acid polymer or copolymer (PLA). Laminates having a first layer comprising the specifically recited PHA copolymer and a second layer comprising a PLA polymer or copolymer are also disclosed. Such compositions, either as blends or different components, generally provide material properties different and improved in any one or more properties as compared to the specifically recited PHA copolymers alone or to PLA polymers or copolymers alone. Properties in which the blended materials or laminates are different and improved are any one of hardness/softness, brittleness/flexibility, tack, i.e., stickiness, toughness, ductility, processability, or opaqueness/transparency, for example. Furthermore, the PHA copolymers of the present invention can be melt processed at much lower temperatures than that of conventional PHAs such as polyhydroxybutyrate (PHB) and polyhydroxybutyrate/valerate (PHBV), and thus are less susceptible to thermal degradation during processing.

Claims 1-15 have been rejected under 35 U.S.C. 102(b) as being anticipated by WO 96/08535. Applicants respectfully submit that in light of the following arguments, the above identified reference would not have led one skilled in the art to the invention as set forth in Claims 1-15.

The Examiner states that WO 96/08535 teaches compositions comprising polyhydroxyalkanoate (PHA) and polylactide (PLA) that can be used to form biodegradable films that are suitable as backsheets in disposable articles and other

molded articles. However, WO 96/08535 does not teach or suggest the use of the specific PHA copolymers recited in Claim 1. In order to be anticipated by a single prior art reference, each element of the claim must be taught, either expressly or inherently in the reference. Since WO 96/08535 does not teach or suggest the use of the specific PHA copolymers recited in Claim 1, it can't anticipate Claims 1-15 of the present invention.

Importantly, Applicants have discovered that the newer type of PHAs claimed in the present invention have superior properties compared to the conventional PHAs disclosed in the WO 96/08535 reference. In particular, the PHAs claimed herein can be melt processed at much lower temperatures than that of conventional PHAs and thus are less susceptible to thermal degradation during processing. Furthermore, the resulting films have improved mechanical properties as they are less crystalline and thus less brittle than films containing conventional PHAs, such as polyhydroxybutyrate (PHB) and polyhydroxybutyrate/valerate (PHBV), disclosed in WO 96/08535.

Next, Claims 1-15 have been rejected under 35 U.S.C. 102(b) as being anticipated by JP 10147653. Applicants respectfully submit that in light of the following arguments, the above identified reference would not have led one skilled in the art to the invention as set forth in Claims 1-15.

The Examiner states that JP 10147653 teaches a biodegradable oriented film obtained by melt blending a composition comprising polyhydroxybutyrate/valerate (PHBV) and a PLA-based polymer as the essential components, followed by extrusion. However, JP 10147653 like WO 96/08535, does not teach or suggest the use of the specific PHA copolymers recited in Claim 1. In order to be anticipated by a single prior art reference, each element of the claim must be taught, either expressly or inherently in the reference. Since JP 10147653 does not teach or suggest the use of the specific PHA copolymers recited in Claim 1, it can't anticipate Claims 1-15 of the present invention.

Importantly, Applicants have discovered that the newer type of PHAs claimed in the present invention have superior properties compared to conventional PHAs such as PHBV disclosed in the JP 10147653 reference. In particular, the PHAs claimed herein can be melt processed at much lower temperatures than that of conventional PHAs such as PHBV and thus are less susceptible to thermal degradation during processing.

Furthermore, the resulting films have improved mechanical properties as they are less crystalline and thus less brittle than films containing conventional PHAs, such as PHBV, disclosed in WO 96/0835.

Next Claims 1-5 have been rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0,753,539. Applicants respectfully submit that in light of the following arguments, the above identified reference would not have led one skilled in the art to the invention as set forth in Claims 1-5.

EP 0,753,539 discloses biodegradable polymer blends comprising a PLA or a copolymer containing lactic acid as the main constituent, and a PHA such as PHB. However, the EP 0,753,539 reference, like WO 96/08535 and/or JP 10147653, does not teach or suggest the use of the specific PHA copolymers recited in Claim 1. Importantly, Applicants have discovered that the newer type of PHAs claimed in the present invention have superior properties compared to conventional PHAs such as PHB disclosed in the EP 0,753,539 reference. In particular, the PHAs claimed herein can be melt processed at much lower temperatures than that of conventional PHAs such as PHB and thus are less susceptible to thermal degradation during processing. Furthermore, the resulting films have improved mechanical properties as they are less crystalline and thus less brittle than films containing conventional PHAs, such as PHB, disclosed in EP 0,753,539. Accordingly, the properties associated with the films of the present invention cannot be construed to be obvious in view of the EP 0,753,539 reference.

Based on the foregoing, Applicants respectfully submit that Claims 1-5 are not obvious over EP 0,753,539 and respectfully request that the Examiner's rejection under 35 U.S.C. §103(a) be withdrawn.

CONCLUSION

In light of the above foregoing remarks, Applicants believe that Claims 1-15 are now in form for allowance. Accordingly, it is respectfully requested that the claims be reconsidered, the rejections under 35 U.S.C. §102(b) and §103(a) be withdrawn, and the claims be allowed. Should the Examiner have any questions or wish to further discuss this matter, it is requested that the undersigned attorney be contacted at (513) 634-9135.

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October 9, 2003
Customer No. 27752